



# IT Strategic Plan

2014 – 2016

*Investing for Tomorrow's  
Technology, Today.*



HOUSTON INFORMATION TECHNOLOGY SERVICES

## Message from Mayor Annise D. Parker

*Dear Houston Residents:*

*On behalf of the residents of Houston, I submit to you the Houston Fiscal Year 2014 IT Strategic Plan, titled “Investing for Tomorrow’s Technology, Today”.*

*We are proud that this plan is balanced, structurally sound, and addresses the five priorities that we laid out for the citizens of Houston. I look forward to working with our team, council, and residents to deliver on the objectives laid out in this document.*

*Regards,  
Annise D. Parker, Mayor*



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## Message from the Chief Information Officer



*We are proud to present our 2014-2016 technology strategic plan for the City of Houston. This plan outlines key strategic initiatives that have been selected as the focus of information technology efforts across the City over the next three years.*

*Technology plays a key role in enabling the City to fulfill its mission. We intend to provide quality, cost-effective services that can be depended upon to help improve the lives of all our employees, citizens, and businesses.*

*The IT Strategic Plan 2014-2016 is directly aligned to the Mayor’s priorities. Specific objectives for achieving these goals are outlined in this document. These six goals are as diverse as the citizens we serve, and I am confident that they support our Mayor’s vision of making this one of the best cities in which to live.*

*This Plan is a collaborative effort of the IT leadership team. I would like to acknowledge the dedication of our team for its continued effort to provide excellent customer service in all we do. Together, we will continue transforming our service delivery to best serve all customers - today and tomorrow.*

*Sincerely,*

*Charles T. Thompson  
City of Houston – Chief Information Officer*

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## Executive Summary

Mayor Parker outlined the following five priorities as the essential building blocks of her administration:



1. Jobs and Sustainable Development
2. Public Safety
3. Infrastructure
4. Quality of Life
5. Fiscal Responsibility

These five priorities depend upon technology solutions in order to succeed. Technology has the ability to supplement human capacity by allowing employees to work more efficiently and effectively while providing a better quality of life and opening new doors of opportunity for our citizens. The Information Technology Strategic Plan aligns directly to each of the Mayor's five priorities while working to optimize overall IT expenditures across the City of Houston.

The Plan includes six main goals:

1. Engage to enable IT to become a partner of choice
2. Create a resilient, scalable, and agile infrastructure
3. Transform the future IT workforce
4. Improve the overall management and delivery of IT services
5. Protect City information
6. Enhance citizen engagement

Texas is America's fastest-growing state, and Houston is one of three of the top five fastest-growing cities in the country, according to *Forbes*. The current economic situation offers unique opportunities. IT expenditures must be viewed horizontally across the enterprise. Opportunities to reach out and break down agency silos for greater economies of scale are prevalent. Opportunities to share agency data for new cross-agency collaborations exist.

Opportunities to be good stewards of the Earth by decreasing utility needs, limiting our carbon footprint, and reusing or recycling end-of-life electronics abound. IT is constantly seeking opportunities to decrease costs while improving services for all customers. We are continuously searching for ways to improve internally to better serve each City department, and ultimately, the citizens of Houston.



## Our Vision

To be a collaborative organization that enables our employees, partners, and citizens to get the utmost value from our technology investments now and in the future.

## Our Mission

To provide innovative service delivery supporting our customer's customers.



## Our Guiding Principles

To fulfill our mission and vision statements, achieve the objectives set out in this Plan, and deliver the best possible returns for the City of Houston, we will follow best practices, achieve consistency of approach, and make effective use of the resources available to us. We will achieve this through an adaptation of methodologies from the following bodies of excellence: The Open Group Architecture Framework (TOGAF®), Project Management Institute (PMI®), and the IT Infrastructure Library (ITIL®) V3, as well as our compliance with the following guiding principles, also known as Business Case Questions, approved by the City of Houston's IT Governance Board:

- Think citywide
- Enable excellent customer service as part of our culture
- Ensure information confidentiality, integrity, and availability
- Promote a consistent IT architecture
- Reuse before buy, buy before build (applications, data and processes)
- Manage IT as an investment for innovation

## Critical Success Factors

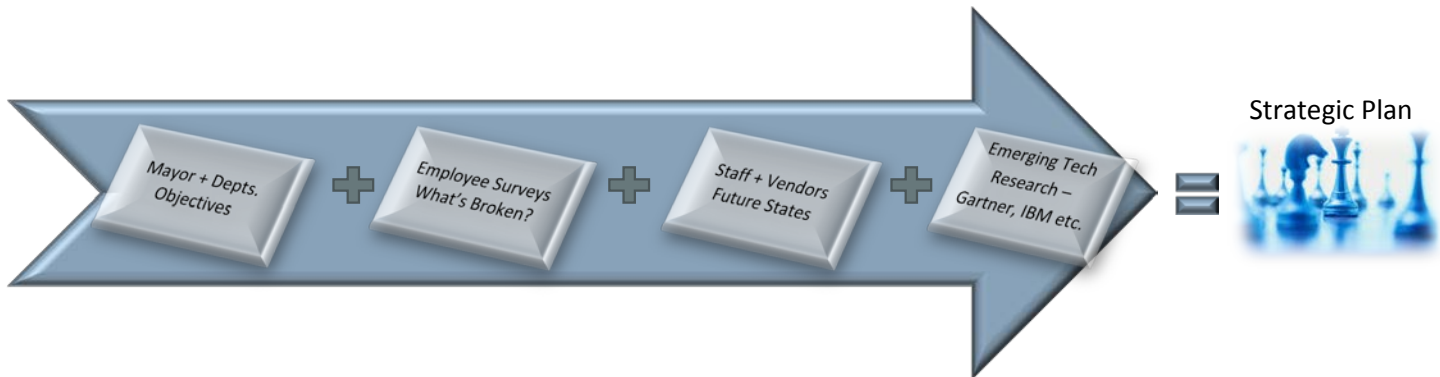
We believe the following factors are critical to IT service delivery and achievement of strategic goals. These factors can impact the successful execution of the IT Strategic Plan:

- Willingness of IT staff to embrace change
- Willingness of all City departments to collaborate for the benefit of the whole
- Sufficient resources to support initiatives with skilled personnel, funding, training, and time
- Active and visible senior management support
- Well-defined and disciplined processes for information capture, data quality, and accuracy of City information and records



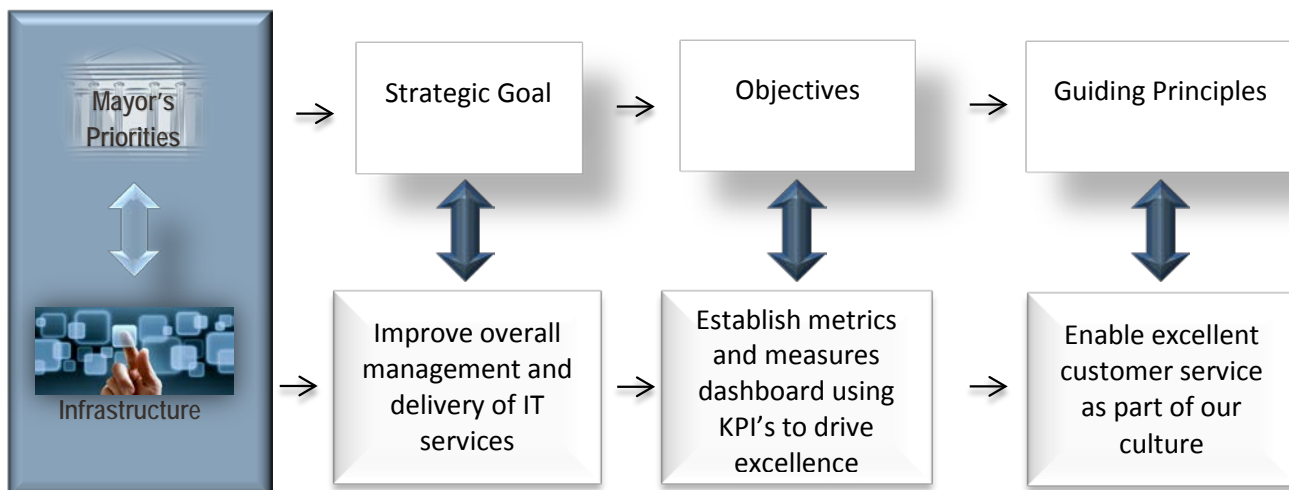
## The Planning Process

This Plan was a collaborative effort involving employees, the IT management teams, business partners, and external consultants. Feedback was collected through focus groups, surveys, interviews and research on emerging technology trends.



## Visualization

The following illustration demonstrates how strategic goals, objectives and principles are aligned to a singular objective. The IT governance framework is used to manage the alignment and tracking of the results. The intent of this illustration is to provide a simple view of the Plan and its relationships.



## Measurement

We will define and publish metrics for each of the strategic goals and initiatives wherever possible using a variety of methods:

1. KPIs (key performance indicators) tied to business initiatives
2. Efficiency and effectiveness IT metrics
3. Benchmarks, both internal and external
4. Balanced scorecards and ERP (Enterprise Resource Planning) metrics

## The Strategic Plan 2014 – 2016

## Goal #1 – Engage to Enable IT to Become a Partner of Choice

*Obj. 1 - Collect business goals, integrate strategy*

*Obj. 2 - Establish a repetitive process that keeps the business and IT aligned*

*Obj. 3 - Provide enterprise applications that empower the business*

*Obj. 4 - Research new and emerging capabilities for insertion into the business*

*Obj. 5 - Manage data as an asset for information-based decision-making*

*Obj. 6 - Develop mobile-ready, highly functional web-based, accessible environments*



The alignment of business and IT is a top priority for the City of Houston. Alignment is defined as the appropriate and timely application of IT in harmony with business objectives, strategies, and requirements<sup>1</sup>. The City of Houston has very clear lines of business (departments) with very clear business deliverables. In addition to providing individual unique technology support for the different businesses, there is a need to provide citywide synergies for underlying similar or interrelated technologies for increased value for the whole.

We will relentlessly strive to leverage technology solutions to meet business objectives. A successful technology integration strategy incorporates IT systems that enable new services, reduce or avoid costs and risks, and increase business productivity. As technology evolves, new capabilities to automate, streamline, and accelerate business processes may be inserted into the organization via improved communication mechanisms, mobile devices, and enhanced accessibility of critical information.

Data is a key asset for the City of Houston and its citizens. We will strive to create a data-driven city by turning data into valuable information. By doing this we will provide our leadership and the citizens they serve with the tools to make relevant decisions. Enterprise Data management will enable the use of key technologies such as business intelligence, location analytics, data warehouses and big data.

Enterprise Applications, such as GIS,<sup>2</sup> will continue to develop and support location services and business applications (such as the Houston Plat Tracker) across all City departments and will bring apps and maps for smarter and simpler analysis to all users across the City, both internal and public, via the MyCity portal – at [Mycity.houstontx.gov](http://Mycity.houstontx.gov).

Mobile devices continue to grow in popularity, both in the public and with City employees. As more and more business processes leverage mobile devices, City information sources such as intranet portals and the public [www.houstontx.gov](http://www.houstontx.gov) site must be optimized to provide an excellent user experience across many screen sizes and interfaces. Through implementation of Content Management Solutions, we will provide a framework that automates the upgrading of tens of thousands of web pages to a new design that is responsive to any device while also minimizing ongoing support costs.

<sup>1</sup> Sarhandi et al., 2011

<sup>2</sup> Geographical Information Systems



## Goal #2 – Create a Resilient, Scalable, and Agile IT Infrastructure



*Obj. 1 - Ensure a base level infrastructure is in place to accommodate growth*

*Obj. 2 - Provide enterprise infrastructure as a utility*

*Obj. 3 - Seek opportunities to adopt and implement cost-effective shared service approaches*

*Obj. 4 - Leverage transformational technologies, e.g., cloud computing, for improved operational efficiencies*

The need for the City's network to be able to dynamically grow and evolve on demand is paramount. Yet, lowering costs while providing reliable connectivity to over 450 City locations via a wide area network is also a primary goal for us. The business requirements of today and tomorrow demand a high-performance network infrastructure that can support increased use of video, faster access to data and applications, and low power use. Mobile solution providers are broadening their offerings to address the needs of in-line business users<sup>3</sup>.

Open standards are also a requirement for ease of multi-agency connectivity, third-party integration and security compliance with industry standards. We have begun a project this fiscal year to upgrade and standardize the Voice and Telco platforms into a single system throughout most of the City. This project will include all associated call center applications.

We will promote the use of Green IT<sup>4</sup> to reduce energy and the real estate footprint by consolidating data center space across the City. Seven facilities have been identified for consolidation activities this fiscal year. In addition, new data center physical facilities will be shared with the Houston Police Department, thus demonstrating our commitment to share services and resources. Furthermore, as part of the consolidation exercise, we seek to expand the use of virtualization platforms to shift our investments to more efficient computing platforms, improve system delivery, and streamline costs.

Cloud computing has been embraced by the City of Houston and is already helping us reduce the total cost of ownership. However, opportunities still abound and the game has already changed in this very fast moving technology. Beyond the cloud are opportunities to move to a hybrid model that completely changes the way we run IT. We prefer using application hosting when there is a desire to satisfy a business need more quickly than standing up infrastructure.

<sup>3</sup> The Expanding Role of Mobility In The Workplace – Forrester Research February 2012

<sup>4</sup> Green IT, also referred to as Green Computing, is the study and practice of environmentally sustainable technology – source: Wikipedia



### Goal #3 – Transform our Future IT Workforce



*Obj. 1 – Attract and retain new people*

*Obj. 2 – Review and align citywide IT classifications*

*Obj. 3 – Target employee productivity through innovative technology*

*Obj. 4 – Revitalize the structure of IT to reflect our demands*

*Obj. 5 – Invest in training and career development of IT professionals to keep skills current*

Information technology workers remain one of the top 10 most difficult positions to fill in America<sup>5</sup>. Houston is the fourth largest city (with its sights on being number three), and one of the fastest growing municipalities in the country - this adds a colorful dimension to this staffing challenge. Most of the growth in Houston is aligned with the energy and health industries. This presents a challenge with staffing to other less financially fluent industries like government. It requires new thinking and approaches to not only attract new resources but to also retain the staff we have. In addition, we are challenged with training and maintenance of skills to continue to be able to support the growth and complexities of the environments we reside in today.

We will conduct research into best practices and methods to target the acquisition and retention of skilled workers, including an increase in collaboration with higher education. We have committed

investments for training and curriculum development to ensure that our teams have the right skills to continue to meet our demands.



Citywide titles and designations have been unchanged for 15 years and now far outdate the technologies that are in use today. For example, the role and skill sets of desktop support analysts today are quite different from their counterparts of 15, or even five years ago. They may be called upon less to support devices and local applications, but more to support cloud or mobile solutions, engage in vendor relationships, and support business process.

Finally, there are several roles that did not exist over a decade ago but are well established careers today. The City is embarking on a job title reclassification project that is expected to yield tremendous benefits in aligning the right people with the right skills.

Research<sup>6</sup> shows that employees operate optimally when given a clear understanding of their roles and responsibilities. Aside from reducing the amount of confusion, it helps the technology groups develop a more accurate taxonomy of IT jobs that will attract tech job seekers, both internally and externally. This will also assist the Human Resources Department with more accurate competitive industry benchmarking for salary and benefits.



<sup>5</sup> Forbes – 10 hardest jobs to fill in America: <http://www.forbes.com/pictures/efkk45ejhem/10-hardest-jobs-to-fill-in-america/>

<sup>6</sup> <http://www.shrm.org/Research/SurveyFindings/Articles/Documents/SHRM-Employee-Job-Satisfaction-Engagement.pdf>

## Goal #4 – Improve the Overall Management of IT Services

*Obj. 1 – Improve IT inventory, asset, and vendor management controls*

*Obj. 2 – Improve and simplify the cost allocation process*

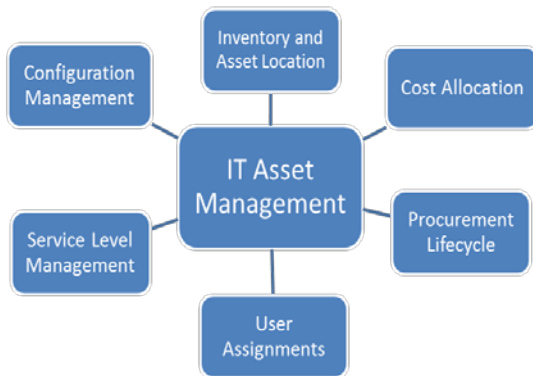
*Obj. 3 – Optimize City of Houston portfolio of IT resources through effective governance*

*Obj. 4 – Create and establish service portfolios, catalogs, and service level agreements*

*Obj. 5 – Establish a citywide metrics and measures dashboard using knowledge performance indicators to drive excellence*

*Obj. 6 – Enable excellent customer service as part of our culture*

Leveraging technology to provide a better experience for clients is a strategic focus for us over the next three years. In the preparation for this Plan, we have spent the last few months asking ourselves and our customers, “What’s wrong?”, “What’s working?”, and “What’s not working?”



Along with the mayor’s goal for fiscal responsibility, we aim to do a better job with IT asset management. We are taking steps to create and maintain an accurate, up to date assessment of all City-owned hardware and software assets including user assignments, asset location, and procurement lifecycle, cost, value and contractual status. This holistic view of inventory will drive an improvement in the quality of technology services, simplify our cost allocation model, and allow better decision-making in the overall management of IT.

There are two types of strategic alignment initiatives tied to the Governance Plan. The first set derives from the IT strategic plan for 2014 - 2016. All of the objectives are driven by delivering the best possible technology services back to the departments and are a joint effort between IT, Finance, and the executive leadership across all City departments.

The second type of alignment reflects a strategic initiative for citywide integration as identified by Executive Order 1-44, Information Technology Governance, the new citywide policy established in December 2012, by Mayor Annise Parker. All new IT projects are now taken through new citywide IT Governance processes, which will continue to be enhanced over the next few months.

Service catalogs and SLAs will be defined to better standardize the offerings and the quality of the services we provide. We aim to provide visibility and manage consumption. A process of measuring and reviewing key performance indicators will be developed to track and improve the effectiveness of all these processes and controls.

## Goal #5 – Protect City Information and Data

*Obj. 1 – Implement an IT security framework*

*Obj. 2 – Ensure secure information systems that host customers' applications and data*

*Obj. 3 – Provide security systems and services*



The City must adhere to federal and state privacy and data security regulations, such as the Health Insurance Portability and Accountability Act (HIPAA) and Payment Card Industry (PCI). Executive Order 1-48, policy on IT Security, mandates that the City develop and maintain a citywide information security program. This will be accomplished by establishing and implementing information security policies, procedures and handbooks to facilitate appropriate protection and accountability of information. The Chief Information Officer has designated a Chief Information Security Official (CISO) to carry out the responsibility to establish a citywide information security capability for information and information systems.

The Chief Information Security Officer (CISO) has developed an *Enterprise IT Security Framework* that, when implemented, will provide the needed protection of the City's business and privacy information. The implementation roadmap has been developed and key security initiatives are underway in Fiscal Year 2014. This roadmap includes an automated vulnerability management framework that will be implemented citywide and will significantly reduce the inherent security risk (from the use of IT resources) to City businesses.

The vulnerability management framework provides systems and services that will enable the automated implementation of critical security controls that are essential to securing information systems that host customer applications and data.

Key security initiatives that have commenced in Fiscal Year 2014 and will continue iteratively through Fiscal Year 2015 and 2016 include:

1. Malware Defenses
2. Continuous Vulnerability Assessment and Remediation
3. Security Risk Intelligence
4. Data Loss Prevention
5. Mobile Device Management (MDM)
6. Cyber Security Awareness Training
7. Cyber Security and Disaster Recovery Planning



## Goal #6 – Enhance Citizen Engagement

*Obj. 1 – Enhance citizen engagement*

*Obj. 2 – Enhance City public safety communications systems and services*

The City of Houston is committed to more actively engaging citizens in the delivery of services, and providing adequate visibility into taxpayers' IT investments.

To strengthen its citizen-centered approach to government, IT has begun to develop a strategy for citizen engagement. One component of this strategy is intended to increase public transparency about IT projects, particularly those that have high impact on citizens.

We will share this information through the Internet and/or social media, to help bring citizens closer to their government. We will also solicit citizen input regarding new technology that can provide for a better government, such as civic programming events and an open data portal.

Houston plans to follow the lead of several major US cities by coordinating an Open Data Initiative. Open Data will empower citizens, non-profits, private business, students and entrepreneurs to find innovative ways to use our data to benefit the society, fuel efficiencies and increase economic growth in Houston.

Open Data is more than just government transparency; it puts citizens in an active role of improving local government.



### Upcoming improvements to public-facing portals include:

- A new release of the current information website that works on any device, which, given the address, can look up multiple current City components of that address, such as school district, council, key map, super neighborhood, trash pickup, etc.
- Partnering with all City departments to deliver accurate and real-time City data for citizens' apps.

## Major Projects in Flight

<i>PROJECT NAME</i>	<i>BRIEF DESCRIPTION</i>	<i>STATUS</i>
CSMART	Court Systems Application – rewrite	In progress
MDM	Mobile device management for City cellphones – upgrade	In progress
PAGES	Deployment of policy, archiving and encryption policies and technology	In progress
Arson Case Mgmt.	Deployment of technology to hire Arson cases for the Fire Department.	In progress
SQL Server Upgrade	Upgrade of databases from SQL 2008 to SQL 2012	In progress
Fleet Software Upgrade	Upgrade of software for City's fleet and fuel management	In progress
Electronic Signatures	Deployment of software to adopt electronic signatures	In progress
SAP Upgrades	Introduction of several new modules to the SAP platform	In progress
Virtualization	Several VDI and server virtualization projects	In progress
Juvenile CMS	Enhancements to the juvenile case management system	In progress
Desktop Refreshes	Technology refreshes to several thousand City desktops	In progress
Network, VOIP and IVR Refresh	Upgrade to thousands of City telephones to VOIP, and upgrades to several City call centers including 311, 911, etc.	In progress
TEMS	Deployment of telecoms management system	In progress
Cyber Security Program	Security program enhancement in conjunction with federal and state authorities	In progress
Civic Innovation Project	Open data portal, enhanced web presence, and other civic engagement sub activities	In progress
Current Address Info Website	Include more information such as school district, trash pickup times, etc.	Planned
Datacenter Consolidation	Consolidation of several City datacenters into two facilities	In progress
HealthTrak	Deployment of clinical management information software for end-to-end outpatient care.	In progress
Parks Inventory Database Upgrades	Integrate with GIS and implement GIS website for the public	Planned
Big Data	Hadoop Research project with GIS-type data feeds	Not started
Citywide Realtime Alert System	ArcGIS GeoEvent Processor for server and ESRI collector apps for ArcGIS	Not started
RMS Upgrade	Records management system upgrade for Police Department	In progress
My City Map Viewer	My City Map Viewer upgrades	Planned
Government Services Locator	Web/Mobile App that will link citizens to closest services	Planned

## Fast Facts

- ✓ Centralized email supporting over 17,000 users and another federated 7,000 users
- ✓ 106,860 internal and 22,720 external outbound messages a day
- ✓ 123,240 internal and 70,770 external inbound messages a day
- ✓ Nearly 3,800 calls per month through a centralized service desk
- ✓ Development and management of over 100 essential applications within the City
- ✓ Support of over 5,500 desktop and laptops
- ✓ Wide area network connecting over 450 sites across the city including, Library, Police, Fire and Public Works Departments
- ✓ Support of several physical and virtual servers across several data centers
- ✓ Over 17,000 phones (VoIP, regular and conference phones)
- ✓ 152 call centers including 911, 311, and other emergency services
- ✓ Over 13,000 subscriber radios for emergency services
- ✓ 52 tower sites
- ✓ 93 Fire Stations with Fire Station alerting
- ✓ 21 inner-local agreements providing service to external agencies
- ✓ Total call volume handled by Houston Emergency Center: 3,004,603
- ✓ Average number of events received per year: approximately 1,977,186 Police and Fire events entered in Computer-Aided Dispatch (CAD) in Fiscal Year 2013
- ✓ Average number of events we dispatch on per year: 1,697,789 events dispatched



## Strategic Planning Definitions

The following planning components and acronyms are defined as follows:

<i>COMPONENT/ACRONYM</i>	<i>DEFINITION</i>
Vision	What and where we want to be.
Mission	Our defined purpose. What we do.
Guiding Principles / Business Case Questions	Criteria by which we acquire, design, manage and support technology
Strategic Goals	What we plan to achieve within a defined timeframe
Objectives	Specific and measurable milestones to achieve the goals
Initiatives	Projects or actions that make up the objectives
ITOC	Citywide Information Technology Operating Committee
ITGB	Citywide Information Technology Governance Board
PMO	Project Management Office
TWG	Technical Working Groups



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